

VIRAL DISEASES—A Panel Discussion

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In the field of infectious disease, medicine has enjoyed several distinct eras. The first was the golden age of bacteriology opened by Pasteur. Next, beginning about 1920, came the age of virology, which now overlaps and coincides with the present era of chemotherapy and of antibiotics.

Progress in virology lagged because of the greater technical difficulties and because there were fewer suitable animals for experimentation on the viral diseases as compared with diseases of bacterial origin. In the past decades, however, viruses have been established as the causative agents of smallpox, poliomyelitis, mumps, varicella, yellow fever, influenza and others. As a result, great progress in the knowledge of these diseases has accrued. But only within the last 15 years or so has general attention been given to several conditions of obscure origin which almost certainly are caused by viruses, as, for examples, certain infection of the respiratory tract (viral pneumonias), and diseases heretofore not associated with viruses, as infections of the liver (viral hepatitis), of the intestinal tract (viral dysentery), of the myocardium, and of the urinary tract (bacterial pyuria). Yet the ultimate proof of viral etiology of most of these conditions is not at hand. Viral infections of the central nervous system are better known, but even at present only 10 to 20 per cent of the encephalitides can be diagnosed etiologically.

In this symposium, newer knowledge of influenza and viral pneumonias is presented by Doctors Eaton and Reimann. Doctors Hamilton and Hammon discuss the viral encephalitides; Dr. Nelson, the epidemiology of poliomyelitis; Dr. Meiklejohn, the viral infections of the liver and gastrointestinal tract. Advances in the knowledge of measles and mumps is dealt with by Dr. Pearson.

The Etiology and Epidemiology of the Virus Group of Encephalitides*

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ALTHOUGH we have at our disposal a wealth of knowledge regarding quite a long list of virus diseases, regarding certain groups (grouped by anatomical systems with major pathology) we must admit of great gaps. Outstanding among these are the virus diseases of the respiratory tract, of the gastro-intestinal tract and those of the nervous system. Fortunately the title of the paper assigned to me, "The Virus Encephalitides," makes it possible to omit those affecting principally the peripheral and sensory nerves, which would require discussing the possible etiology of some of the poorly understood peripheral neuritides, herpes zoster and others even less well understood. I will also avoid consideration of the much discussed and abused Guillain-Barré syndrome since, although involving the central nervous system to some extent, it can seldom be termed an encephalitis.

Von Economo's Encephalitis: From an historical standpoint Von Economo's encephalitis, or *encephalitis lethargica* is the most important of those claimed to be of virus origin. Much can be said to support this pretender to the title, but in the final analysis it appears that the etiological agent or agents responsible have never been isolated, nor has the disease been experimentally transmitted by a bacteria-free filtrate. Whether the causative agent, once present in epidemic and endemic distribution, is still

with us cannot be determined. It would seem preferable, therefore, that any encephalitis now encountered which appears to resemble the Von Economo type and which cannot be etiologically diagnosed, should be called *encephalitis, type undetermined*, rather than *encephalitis lethargica* or *epidemic encephalitis*. Of the mode of transmission of the old epidemic disease we know practically nothing.

Hemorrhagic Encephalitis and Disseminated Encephalitis: In recent years Russian investigators claim to have isolated viruses for what they call "Acute primary hemorrhagic meningo-encephalitis,"¹³ and for a "disseminated encephalitis."¹⁴ Both of these viruses were isolated from blood or spinal fluid, or both, by the inoculation of mice. The virus causing the "disseminated encephalitis" is also claimed to be the etiological agent for chronic multiple sclerosis. My personal opinion from studying these Russian manuscripts is that until these findings are confirmed, one might well reserve coming to any definite conclusion. The Russians have thrown but little light upon the epidemiology of these diseases.

Herpes Encephalitis: Encephalitis caused by the virus of herpes simplex (labialis) should, in my opinion, receive much serious attention. The virus has now been isolated from several fatal cases and confirming evidence has been obtained by the demonstration of eosinophilic intranuclear inclusion bodies in certain large neurons, particularly those of the hippocampus. Since herpes virus is responsible for a latent infection in most of us, simply isolating the virus from human tissue carries little significance alone; but intranuclear inclusion bodies, though not pathognomonic, are characteristic of its pathology and indicate activity and damage to the cells in which they are found.

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